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=> d his

     (FILE 'HOME' ENTERED AT 10:31:44 ON 01 FEB 2011)

     FILE 'MEDLINE, CAPLUS, BIOSIS, SCISEARCH, LIFESCI' ENTERED AT 10:31:59 ON
     01 FEB 2011
L1       228783 S (PLURIPOTENT OR EMBRYONIC)(4A)CELL
L2         8534 S EMBRYOID(W)(BODY OR BODIES)
L3         6715 S L1(P)L2
L4         2452 S L1(9A)L2
L5         1181 DUP REM L4 (1271 DUPLICATES REMOVED)
L6         1171 S EMBRYONIC(W)GERM(W)CELL
L7           67 S L6(P)L2
L8           25 DUP REM L7 (42 DUPLICATES REMOVED)

=> d au ti so pi 1-25 l8

L8   ANSWER 1 OF 25     MEDLINE on STN                  DUPLICATE 1
AU   Hiller Marc; Liu Cyndi; Blumenthal Paul D; Gearhart John D; Kerr Candace L
TI   Bone morphogenetic protein 4 mediates human embryonic germ cell
     derivation.
SO   Stem cells and development, (2011 Feb) Vol. 20, No. 2, pp. 351-61.
     Electronic Publication: 2010-10-21.
     Journal code: 101197107. E-ISSN: 1557-8534. L-ISSN: 1547-3287.

L8   ANSWER 2 OF 25  CAPLUS  COPYRIGHT 2011 ACS on STN
AU   Chen, Yongzhen; Zhu, Min; Li, Fang; Zhang, Yujuan
TI   Ascorbic acid induces differentiation of human embryonic germ cells
     towards cardiomyocytes
SO   Jiangsu Yiyao (2010), 36(13), 1551-1554, C2
     CODEN: CIYADX; ISSN: 0253-3685

L8   ANSWER 3 OF 25     MEDLINE on STN                  DUPLICATE 2
AU   Wu Yanqun; Ge Chutian; Zeng Weidong; Zhang Caiqiao
TI   Induced multilineage differentiation of chicken embryonic
     germ cells via embryoid body
     formation.
SO   Stem cells and development, (2010 Feb) Vol. 19, No. 2, pp. 195-202.
     Journal code: 101197107. E-ISSN: 1557-8534. L-ISSN: 1547-3287.

L8   ANSWER 4 OF 25     MEDLINE on STN                  DUPLICATE 3
AU   Hillel Alexander T; Varghese Shyni; Petsche Jennifer; Shamblott Michael J;
     Elisseeff Jennifer H
TI   Embryonic germ cells are capable of adipogenic differentiation in vitro
     and in vivo.
SO   Tissue engineering. Part A, (2009 Mar) Vol. 15, No. 3, pp. 479-86.
     Journal code: 101466659. ISSN: 1937-3341. L-ISSN: 1937-3341.

L8   ANSWER 5 OF 25  SCISEARCH  COPYRIGHT (c) 2011 The Thomson Corporation  on
     STN
AU   Crane, Janet L.; Hsu, Stephanie; Germain-Lee, Emily L. (Reprint);
     Shamblott, Michael J.; Shamblott, Michael J.; Axelman, Joyce; Levine,
     Michael A.; Levine, Michael A.
TI   Imprinting Status of G alpha(S), NESP55, and XL alpha s in Cell Cultures
     Derived from Human Embryonic Germ Cells: GNAS Imprinting in Human
     Embryonic Germ Cells
SO   CTS-CLINICAL AND TRANSLATIONAL SCIENCE, (OCT 2009) Vol. 2, No. 5, pp.
     355-360.
     ISSN: 1752-8054.

L8   ANSWER 6 OF 25     MEDLINE on STN                  DUPLICATE 4
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AU Hua Jinlian; Yu Haisheng; Liu Sheng; Dou Zhongying; Sun Yadong; Jing Xiaoqi; Yang Chunrong; Lei Anmin; Wang Huayan; Gao Zhimin
TI Derivation and characterization of human embryonic germ cells: serum-free culture and differentiation potential.
SO Reproductive biomedicine online, (2009 Aug) Vol. 19, No. 2, pp. 238-49.
Journal code: 101122473. E-ISSN: 1472-6491. L-ISSN: 1472-6483.

L8 ANSWER 7 OF 25 MEDLINE on STN DUPLICATE 5
AU Wang Juan; Jiao Fei; Pan Xiao-Hong; Xie Shu-Yang; Li Zun-Ling; Niu Xin-Hua; Du Li-Xin
TI Directed differentiation of chick embryonic germ cells into neural cells using retinoic acid induction in vitro.
SO Journal of neuroscience methods, (2009 Feb 15) Vol. 177, No. 1, pp. 168-76. Electronic Publication: 2008-10-19.
Journal code: 7905558. ISSN: 0165-0270. L-ISSN: 0165-0270.

L8 ANSWER 8 OF 25 CAPLUS COPYRIGHT 2011 ACS on STN DUPLICATE 6
AU Wang, Juan; Pan, Xiaohong; Du, Lixin
TI Differentiation of chicken embryonic germ cells into neural stem cells in vitro
SO Dongwu Xuebao (2008), 54(5), 855-860
CODEN: TWHPA3; ISSN: 0001-7302

L8 ANSWER 9 OF 25 MEDLINE on STN DUPLICATE 7
AU Huang Ben; Xie Ti-San; Shi De-Shun; Li Tong; Wang Xiao-Li; Mo Yi; Wang Zhi-Qiang; Li Meng-Mei
TI Isolation and characterization of EG-like cells from Chinese swamp buffalo (Bubalus bubalis).
SO Cell biology international, (2007 Oct) Vol. 31, No. 10, pp. 1079-88. Electronic Publication: 2007-03-19.
Journal code: 9307129. ISSN: 1065-6995. L-ISSN: 1065-6995.

L8 ANSWER 10 OF 25 MEDLINE on STN DUPLICATE 8
AU Chen Bin; Shi Jianjun; Zheng Junke; Chen Ying; Wang Kai; Yang Qingzhang; Chen Xuejin; Yang Zhuqing; Zhou Xiaofei; Zhu Youming; Chu Jianxin; Liu Ailian; Sheng Hui Z
TI Differentiation of liver cells from human primordial germ cell-derived progenitors.
SO Differentiation; research in biological diversity, (2007 Jun) Vol. 75, No. 5, pp. 350-9. Electronic Publication: 2007-02-05.
Journal code: 0401650. ISSN: 0301-4681. L-ISSN: 0301-4681.

L8 ANSWER 11 OF 25 BIOSIS COPYRIGHT (c) 2011 The Thomson Corporation on STN
AU Shen, Wei [Reprint Author]; Li, Lan; Pan, Qingjie; Sun, Lilan; Zhai, Xiangwei
TI Mouse embryonic stem cells can be induced to differentiate into oocyte-like cells in vitro.
SO Biology of Reproduction, (2007) No. Sp. Iss. SI, pp. 221.
Meeting Info.: 40th Annual Meeting of the Society-for-the-Study-of-Reproduction. San Antonio, TX, USA. July 21 -25, 2007. Soc Study Reprod.
CODEN: BIREBV. ISSN: 0006-3363.

L8 ANSWER 12 OF 25 MEDLINE on STN DUPLICATE 9
AU Jung Jin Gyoung; Lee Young Mok; Park Tae Sub; Park Sang Hyun; Lim Jeong Mook; Han Jae Yong
TI Identification, culture, and characterization of germline stem cell-like cells in chicken testes.
SO Biology of reproduction, (2007 Jan) Vol. 76, No. 1, pp. 173-82. Electronic Publication: 2006-10-11.

Journal code: 0207224. ISSN: 0006-3363. L-ISSN: 0006-3363.

L8 ANSWER 13 OF 25 MEDLINE on STN DUPLICATE 10
AU Kerr Candace L; Gearhart John D; Elliott Aaron M; Donovan Peter J
TI Embryonic germ cells: when germ cells become stem cells.
SO Seminars in reproductive medicine, (2006 Nov) Vol. 24, No. 5, pp. 304-13. Ref: 111
Journal code: 100909394. ISSN: 1526-8004. L-ISSN: 1526-4564.

L8 ANSWER 14 OF 25 MEDLINE on STN DUPLICATE 11
AU Yim Evelyn K F; Leong Kam W
TI Proliferation and differentiation of human embryonic germ cell derivatives in bioactive polymeric fibrous scaffold.
SO Journal of biomaterials science. Polymer edition, (2005) Vol. 16, No. 10, pp. 1193-217.
Journal code: 9007393. ISSN: 0920-5063. L-ISSN: 0920-5063.

L8 ANSWER 15 OF 25 CAPLUS COPYRIGHT 2011 ACS on STN
AU Kim, Myoung Sook; Hwang, Nathaniel S.; Lee, Janice; Kim, Tae-Kyun; Leong, Kam; Shamblott, Michael J.; Gearhart, John; Elisseeff, Jennifer
TI Musculoskeletal differentiation of cells derived from human embryonic germ cells
SO Stem Cells (Durham, NC, United States) (2005), 23(1), 113-123
CODEN: STCEEJ; ISSN: 1066-5099

L8 ANSWER 16 OF 25 MEDLINE on STN DUPLICATE 12
AU Petitte J N; Liu G; Yang Z
TI Avian pluripotent stem cells.
SO Mechanisms of development, (2004 Sep) Vol. 121, No. 9, pp. 1159-68. Ref: 77
Journal code: 9101218. ISSN: 0925-4773. L-ISSN: 0925-4773.

L8 ANSWER 17 OF 25 MEDLINE on STN DUPLICATE 13
AU Geijsen Niels; Horoschak Melissa; Kim Kitai; Gribnau Joost; Eggan Kevin; Daley George Q
TI Derivation of embryonic germ cells and male gametes from embryonic stem cells.
SO Nature, (2004 Jan 8) Vol. 427, No. 6970, pp. 148-54. Electronic Publication: 2003-12-10.
Journal code: 0410462. E-ISSN: 1476-4687. L-ISSN: 0028-0836.

L8 ANSWER 18 OF 25 CAPLUS COPYRIGHT 2011 ACS on STN
IN Dominko, Tanja; Page, Raymond
TI De-differentiation and re-differentiation of somatic cells and productionof cells for cell therapies
SO PCT Int. Appl.
CODEN: PIXXD2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003018780	A1	20030306	WO 2002-US26798	20020827
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 20030044976	A1	20030306	US 2002-228316	20020827

AU 2002329811 A1 20030310 AU 2002-329811 20020827
US 20060110830 A1 20060525 US 2005-55454 20050209
US 20080076176 A1 20080327 US 2007-842074 20070820

L8 ANSWER 19 OF 25 MEDLINE on STN DUPLICATE 14
AU Kerr Douglas A; Llado Jeronia; Shamblott Michael J; Maragakis Nicholas J; Irani David N; Crawford Thomas O; Krishnan Chitra; Dike Sonny; Gearhart John D; Rothstein Jeffrey D
TI Human embryonic germ cell derivatives facilitate motor recovery of rats with diffuse motor neuron injury.
SO The Journal of neuroscience : the official journal of the Society for Neuroscience, (2003 Jun 15) Vol. 23, No. 12, pp. 5131-40.
Journal code: 8102140. E-ISSN: 1529-2401. L-ISSN: 0270-6474.

L8 ANSWER 20 OF 25 BIOSIS COPYRIGHT (c) 2011 The Thomson Corporation on STN
AU Kerr, D. A. [Reprint Author]; Llado, J. [Reprint Author]; Shamblott, M. J. [Reprint Author]; Maragakis, N. J. [Reprint Author]; Irani, D. N. [Reprint Author]; Crawford, T. O. [Reprint Author]; Gearhart, J. D. [Reprint Author]; Rothstein, J. D. [Reprint Author]
TI HUMAN EMBRYONIC GERM CELL DERIVATIVES FACILITATE MOTOR RECOVERY OF RATS WITH DIFFUSE MOTOR NEURON INJURY.
SO Society for Neuroscience Abstract Viewer and Itinerary Planner, (2002) Vol. 2002, pp. Abstract No. 852.12. http://sfn.scholarone.com. cd-rom.
Meeting Info.: 32nd Annual Meeting of the Society for Neuroscience. Orlando, Florida, USA. November 02-07, 2002. Society for Neuroscience.

L8 ANSWER 21 OF 25 CAPLUS COPYRIGHT 2011 ACS on STN
AU Xu, Xin; Cong, Xiaoqian; Zhang, Shangquan; Yan, Yuanchang
TI Effect of kinase-negative EGFR gene on differentiation of embryonic germ cell line EG4
SO Chinese Science Bulletin (2001), 46(16), 1364-1366
CODEN: CSBUEF; ISSN: 1001-6538

L8 ANSWER 22 OF 25 MEDLINE on STN DUPLICATE 15
AU Shamblott M J; Axelman J; Littlefield J W; Blumenthal P D; Huggins G R; Cui Y; Cheng L; Gearhart J D
TI Human embryonic germ cell derivatives express a broad range of developmentally distinct markers and proliferate extensively in vitro.
SO Proceedings of the National Academy of Sciences of the United States of America, (2001 Jan 2) Vol. 98, No. 1, pp. 113-8.
Journal code: 7505876. ISSN: 0027-8424. L-ISSN: 0027-8424.
Report No.: NLM-PMC14553.

L8 ANSWER 23 OF 25 SCISEARCH COPYRIGHT (c) 2011 The Thomson Corporation on STN
AU Piedrahita J A (Reprint); Lee C K; Moore K; Scales N; Westhusin M; Newton G; Im K S
TI Isolation and genetic transformation of primordial germ cell (PGC)-derived cells from cattle, goats, rabbits and rats
SO ASIAN-AUSTRALASIAN JOURNAL OF ANIMAL SCIENCES, (MAY 2000) Vol. 13, No. 5, pp. 587-594.
ISSN: 1011-2367.

L8 ANSWER 24 OF 25 CAPLUS COPYRIGHT 2011 ACS on STN
AU Ohtaka, Takahiko; Matsui, Yasuhisa; Obinata, Masuo
TI Hematopoietic development of primordial germ cell-derived mouse embryonic germ cells in culture
SO Biochemical and Biophysical Research Communications (1999), 260(2), 475-482
CODEN: BBRCA9; ISSN: 0006-291X

L8 ANSWER 25 OF 25 SCISEARCH COPYRIGHT (c) 2011 The Thomson Corporation on STN
AU Gearhart J D (Reprint); Shamblott M J; Axelman J; Wang S P; Bugg E M; Littlefield J W; Donovan P J; Blumenthal P D; Huggins G R
TI Derivation of pluripotent stem cells horn cultured human primordial germ cells
SO PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, (10 NOV 1998) Vol. 95, No. 23, pp. 13726-13731. ISSN: 0027-8424.

=> d ab 20-25 l8

L8 ANSWER 20 OF 25 BIOSIS COPYRIGHT (c) 2011 The Thomson Corporation on STN
AB We have investigated the potential of human pluripotent cells to restore function in rats paralyzed with a virus-induced motor neuronopathy. Cells derived from embryonic germ cells introduced into the cerebrospinal fluid were distributed extensively over the rostral-caudal length of the spinal cord and migrated into the spinal cord parenchyma. Some of the transplanted human cells expressed the neuroglial progenitor marker nestin, while others expressed immunohistochemical markers characteristic of astrocytes or mature neurons. Rare transplanted cells developed immunoreactivity to choline acetyl-transferase and sent axons into the sciatic nerve as detected by retrograde labeling. Paralyzed animals transplanted with embryoid body -derived cells partially recovered motor function 12 and 24 weeks post transplantation, whereas control animals remained paralyzed. Transplanted embryoid body-derived cells protected host neurons from death and facilitated reafferentation of motor neuron cell bodies. We conclude that cells derived from human pluripotent stem cells have the capacity to restore neurologic function in animals with diffuse motor neuron disease and may present a potential strategy for treating individuals with amyotrophic lateral sclerosis or spinal muscular atrophy.

L8 ANSWER 21 OF 25 CAPLUS COPYRIGHT 2011 ACS on STN
AB EG4 cells derived from primordial germ cells (PGCs) of 10.5 d post coitum 129/svJ mouse embryos can be used as a model system for in vitro differentiation study due to their pluripotential development ability. EG4 cell lines with stable expression of kinase-neg. EGFR cDNA, designated EG4-EGFRd, were generated by gene transfection. We found that: (i) EG4-EGFRd cells share the similar morphol. and growing character with wildtype cells that can maintain undifferentiated state in long term culture. (ii) Treatment of EG4 cells with RA resulted in differentiation of adipocyte, while in mutant clones of EG4-EGFRd, adipocytes were sparse or absent under the same condition, indicating the role of EGFR expressed during adipocyte development. (iii) Histol. anal. showed that predominant tissues in teratocarcinomas derived from EG4-EGFRd cells and wildtype cells are different. A large amount of undifferentiated cells was present in those coming from mutant cell clones. In addition some cardiac and skeletal muscles are prominently differentiated cell types. EG4 wildtype cells produced multiple differentiated cell types of three primary germ layers such as cartilage, epithelia and neural tube. These studies suggested that EGFR-dependent differentiation was inhibited in kinase-neg. EG4 cells.

L8 ANSWER 22 OF 25 MEDLINE on STN DUPLICATE 15
AB Human pluripotent stem cells (hPSCs) have been derived from the inner cell mass cells of blastocysts (embryonic stem cells) and primordial germ cells of the developing gonadal ridge (embryonic germ

cells). Like their mouse counterparts, hPSCs can be maintained in culture in an undifferentiated state and, upon differentiation, generate a wide variety of cell types. Embryoid body (EB) formation is a requisite step in the process of in vitro differentiation of these stem cells and has been used to derive neurons and glia, vascular endothelium, hematopoietic cells, cardiomyocytes, and glucose-responsive insulin-producing cells from mouse PSCs. EBs generated from human embryonic germ cell cultures have also been found to contain a wide variety of cell types, including neural cells, vascular endothelium, muscle cells, and endodermal derivatives. Here, we report the isolation and culture of cells from human EBs as well as a characterization of their gene expression during growth in several different culture environments. These heterogeneous cell cultures are capable of robust and long-term [>70 population doublings (PD)] proliferation in culture, have normal karyotypes, and can be cryopreserved, clonally isolated, and stably transfected. Cell cultures and clonal lines retain a broad pattern of gene expression including simultaneous expression of markers normally associated with cells of neural, vascular/hematopoietic, muscle, and endoderm lineages. The growth and expression characteristics of these EB-derived cells suggest that they are relatively uncommitted precursor or progenitor cells. EB-derived cells may be suited to studies of human cell differentiation and may play a role in future transplantation therapies.

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AB At present embryonic stem (ES) cells with confirmed pluripotential properties are only available in the mouse. Recently, we were able to isolate, culture and genetically transform primordial germ cell (PGC)-derived cells from pig embryos and demonstrate their ability to contribute to chimera development in the pig. In order to determine whether the system we developed could be used to isolate embryonic germ (EG) cells from other mammalian species, we placed isolated PGCs from cattle, goats, rabbits and rats in culture. Briefly, PGCs were isolated from fetuses of cow (day 30-50), goat (day 25), rabbit (day 15-18) and rat (day 11-12), and plated on. STO feeder cells in Dulbecco's modified Eagle's medium (DMEM): Ham's F10 medium (1:1) supplemented with 0.01 mM nonessential amino acids, 2 mM L-glutamine, 0.1 mM beta- mercaptoethnol, soluble recombinant human stem cell factor (SCF; 40ng/ml), human basic fibroblast growth factor (bFGF; 20ng/ml) and human leukemia inhibitory factor (LIF; 20ng/ml). For maintenance of the cells, colonies were passed to fresh feeders every 7-10 days. In all species tested, we were able to obtain and maintain colonies with ES-like morphology. Their developmental potential was tested by alkaline phosphatase (AP) staining and in vitro differentiation assay. For genetic transformation, cells were electroporated with a construct containing the green fluorescent protein (GFP) under the control of the cytomegalovirus (CMV) promoter. (GFP-expressing colonies were detected in cattle, rabbits and rats. These results suggest that PGC-derived cells from cattle, goats, rabbits and rats can be isolated, cultured, and genetically transformed, and provide the basis for analyzing their developmental potential and their possible use for the precise genetic modification of these species.

L8 ANSWER 24 OF 25 CAPLUS COPYRIGHT 2011 ACS on STN

AB Induction of hematopoiesis in an embryonic germ (EG) cell line derived from mouse primordial germ cells (PGCs) was examined When single undifferentiated EG-1 cells were inoculated directly into the methylcellulose medium, both primitive and definitive erythropoiesis were seen in embryoid bodies derived from the EG cells as observed in ES cells, and production of myeloid cell lineages was stimulated by IL-3. These results indicate that EG cells acquired in vitro potency to differentiate toward

hematopoietic cells, although they were derived from PGC and are distinct from inner cell mass-derived ES cells with regard to gene expression and patterns of DNA methylation corresponding to genomic imprinting. It turns out that they are useful for study of cell differentiation in the animals whose ES cells are not available.

L8 ANSWER 25 OF 25 SCISEARCH COPYRIGHT (c) 2011 The Thomson Corporation on STN

AB Human pluripotent stem cells would be invaluable for in vitro studies of aspects of human embryogenesis. With the goal of establishing pluripotent stem cell lines, gonadal ridges and mesenteries containing primordial germ cells (PGCs, 5-9 weeks postfertilization) were cultured on mouse STO fibroblast feeder layers in the presence of human recombinant leukemia inhibitory factor, human recombinant basic fibroblast growth factor, and forskolin. Initially, single PGCs in culture were visualized by alkaline phosphatase activity staining. Over a period of 7-21 days, PGCs gave rise to large multicellular colonies resembling those of mouse pluripotent stem cells termed embryonic stem and embryonic germ (EG) cells. Throughout the culture period most cells within the colonies continued to be alkaline phosphatase-positive and tested positive against a panel of five immunological markers (SSEA-1, SSEA-3, SSEA-4, TRA-1-60, and TRA-1-81) that have been used routinely to characterize embryonic stem and EG cells. The cultured cells have been continuously passaged and found to be karyotypically normal and stable. Both XX and XY cell cultures have been obtained. Immunohistochemical analysis of embryoid bodies collected from these cultures revealed a wide variety of differentiated cell types, including derivatives of all three embryonic germ layers. Based on their origin and demonstrated properties, these human PGC-derived cultures meet the criteria for pluripotent stem cells and most closely resemble EG cells.